

What is claimed is:

1. A protein selected from the group consisting of

(A) a protein having an amino acid sequence represented by amino acid position Nos. 1 to 519 in SEQ ID NO: 2 in the sequence listing,

5 (B) a protein having an amino acid sequence represented by amino acid position Nos. 1 to 510 in SEQ ID NO: 4 in the sequence listing,

(C) a protein having an amino acid sequence corresponding to amino acid position Nos. 1 to 519 in SEQ ID NO: 2, wherein one or more amino acid(s) are substituted, deleted, inserted, added or inverted in the sequence of SEQ ID:2, and which protein has an  
10 activity of catalyzing the reaction for liberating an amino acid at an N-terminal of a peptide, and

(D) a protein having an amino acid sequence corresponding to amino acid position Nos. 1 to 510 in SEQ ID NO: 4, wherein one or more amino acid(s) are substituted, deleted, inserted, added or inverted in the sequence of SEQ ID:4, and which protein has an  
15 activity of catalyzing the reaction for liberating an amino acid at an N-terminal of a peptide.

2. A Nucleic acid molecule encoding a protein selected from the group consisting of

(A) a protein having an amino acid sequence represented by amino acid position Nos. 1 to 519 in SEQ ID NO: 2 in the sequence listing,  
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(B) a protein having an amino acid sequence represented by amino acid position Nos. 1 to 510 in SEQ ID NO: 4 in the sequence listing,

(C) a protein having an amino acid sequence corresponding to amino acid position Nos. 1 to 519 in SEQ ID NO: 2, wherein one or more amino acid(s) are substituted, deleted, inserted, added or inverted in the sequence of SEQ ID:2, and which protein has an  
25 activity of catalyzing the reaction for liberating an amino acid at an N-terminal of a peptide, and

(D) a protein having an amino acid sequence corresponding to amino acid position Nos. 1 to 510 in SEQ ID NO: 4, wherein one or more amino acid(s) are substituted, deleted, inserted, added or inverted in the sequence of SEQ ID:4, and which protein has an  
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activity of catalyzing the reaction for liberating an amino acid at an N-terminal of a peptide.

3. Nucleic acid molecules according to claim 2, which is selected from the group
- 5 consisting of
- (a) a DNA having a nucleotide sequence of nucleotide position Nos. 72 to 1628 in the nucleotide sequence shown in SEQ ID NO: 2,
- (b) a DNA having a nucleotide sequence of nucleotide position Nos. 73 to 1602 in the nucleotide sequence shown in SEQ ID NO: 4,
- 10 (c) a DNA that hybridizes with DNA as defined in (a) under stringent conditions and encodes a protein having an activity of catalyzing the reaction for releasing an amino acid from N-terminal of a peptide, and
- (d) a DNA that hybridizes with DNA as defined in (b) under stringent conditions and encodes a protein having an activity of catalyzing the reaction for releasing an amino
- 15 acid from N-terminal of a peptide.

4. A nucleic acid molecule according to claim 3 having the nucleotide sequence of SEQ ID NO: 2 or 4.

- 20 5. A recombinant nucleic acid molecule containing the nucleic acids according to claim 2.

6. A transformed microorganism host containing the nucleic acid molecule according to claim 2 in a form that can be expressed.

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7. The transformed microorganism host according to claim 6, which is a filamentous fungus, yeast or Escherichia bacterium.

8. A process for producing an aminopeptidase, which comprises the steps of culturing
- 30 the transformed microorganism host according to claim 7 to express nucleic acid

molecules introduced into the transformed microorganism host and recovering the produced protein.

9. An aminopeptidase having the following properties 1) to 8):

- 5 1) hydrolyzing a peptide or protein having leucine or methionine at the N-terminal to release leucine or methionine;
- 2) having an optimum pH of 7.0 to 7.5;
- 3) having an optimum temperature of 37°C to 45°C;
- 4) having a remaining activity of at least 80 % even at a sodium chloride concentration  
10 of 3 M, with the activity thereof in the absence of sodium chloride being defined as 100 %;
- 5) having a remaining activity of at least 80 % after the storage in the presence of 3 M of sodium chloride at 0°C for 24 hours, with the activity thereof after the storage in the absence of sodium chloride at 0°C for 24 hours being defined as 100 %;
- 15 6) having a remaining activity of at least 60 % after the storage at pH 5.8 to 9.5 at 0°C for 24 hours, with the activity thereof after the storage at pH 7.5 at 0°C for 24 hours being defined as 100 %;
- 7) having a molecular weight of 550 kD on non-denatured polyacrylamide gel and a molecular weight of 22, 33 kD on denatured polyacrylamide gel; and,
- 20 8) requiring cobalt ion or zinc ion for being activated.